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| EXAMINER |
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PAPER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/820,451
Filing Date: March 28, 2001
Appellant(s): CU ET AL.

MAILED

JAN 25 2008

Technology Center 2100

Erin C. Ming
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on November 16, 2007 appealing from the Office action mailed on April 17, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6289336

Melton et al.

Sept. 11, 2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Specification Objection

The specification is objected to under 37 CFR 1.71 because the specification failing to provide an adequate written description of the invention.

Initially, the examiner notes the separate nature of the written description requirement as contrasted to the enablement requirement of the first paragraph of 35 U.S.C. 112. See *In re Barker*, 559 F.2d 588, 194 USPQ 470 (C.C.P.A. 1977). The function of the written description requirement is to ensure that the inventor had possession, as of the filing date of the application here relied on, of the specific subject matter later claimed by him. See *In re Edwards*, 568 F.2d 1349, 196 USPQ 465 (C.C.P.A. 1978). The question is not merely one of literal support for the questioned claim language in the original disclosure, it is one of the disclosure of concepts. See *In re Wilder*, 736 F.2d 1516 222 USPQ 369 (Fed. Cir. 1984) and *In re Kaslow*, 707 F.2d 1366, 217 USPQ 1089 (Fed. Cir. 1983). It appears that applicants have attempted to

incorporate an abstract generalized scalar function and column function into their specification to thereby support claims to any combination or permutation of features therefrom. The fact that features are mentioned individually does not mean that applicants have invented anything. There must be some evidence within the application filed that applicants were in possession of the claimed combinations. Incorporation by reference of a dictionary does not constitute disclosure of a novel which uses only words from that dictionary.

Similarly, without more, the abstract stand alone generalized scalar function and the column function do not provide support for combining any features, regardless of what applicants may teach.

To be effective in showing possession of the invention, an incorporation of the structures, links and mechanism derived from the claimed abstract generalized function to simulate the conventional column function environment which specifically contribute to the claimed features and for what purpose should be disclosed.

Specification Objection (continue)

The specification is objected to under 37 CFR 1.71 because the specification fails to provide an enabling description of the claimed invention.

The instant specification fails to disclose the actual, practical steps of a simulation mechanism and the corresponding data structures for simulating the claimed abstract generalized scalar function with row parameters into an abstract column environment. Particularly, the submitted specification merely recites allowing a user to specify at least one row for the claimed abstract generalized scalar function to simulate

an abstract column environment for an abstract column function to be performed on the row without disclosing the actual, practical steps for forming the claimed abstract generalized scalar function, activating the claimed abstract generalized scalar function initializing the first entry, evaluating each entry and finalizing the last entry of the at least one row, such that the simulating of a column environment will produce a useful, concrete, and tangible result.

If applicants continue to prosecute the application, revision of the specification and claims to present the application in proper form is required. While an application can be amended to make it clearly understandable, no new subject matter can be added that was not disclosed in the application as originally filed.

Claim Rejections - 35 USC § 101

Claims 1-26 are rejected under 35 U.S. C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-26 recite an idea of utilizing a column function in a structure query language (SQL) environment for intended use in the preamble. However, the steps in the claim body allows the individual to specify at least one row as an argument for an abstract generalized scalar function to simulate an abstract column environment thereby. The "allowing" phrase repeatedly recited in independent claims 1, 8 and 15 does not cause any functionality to occur in the claimed system. This is demonstrated by the absent recitation of any code or hardware for causing the claimed system to do

anything. Instead, it merely ensures that there is no code or steps that prohibit a computer system from doing the recited acts.

Furthermore, during a telephone interview initiated by the instant application attorney -- Ms. Janyce R. Mitchell -- on July 8, 2005, the attorney on record indicated that the instant invention deals with reversing a matrix (or a table) to feed columns as rows into the claimed generalized scalar function to simulate a column environment on the at least one row to provide an output, but the output does not need to be repeatable for the same matrix (or table). Therefore, since the claimed invention, as a whole, does not appear to provide a useful, concrete and tangible result for real world application, as such, these claims only constitute an idea and does not apply, involve, use, or advance the technological arts.

In addition, the claimed computer-readable medium recited in claims 8-14 is intended to include a computer readable signal [e.g., please refer to the last paragraph of instant specification] which fails the claims fall within a statutory of invention.

Moreover, the claimed system lacks of physical hardware to execute the claimed operations, it merely directs to software per se.

Thus, based on the discussion above the 35 U.S.C. 101 rejections are maintained.

To expedite a complete examination of the instant application the claims rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in

Application/Control Number:
09/820,451
Art Unit: 2161

Page 7

anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 1, 8, and 15, it is unknown what is the structure of the claimed generalized scalar function, How could this generalized function transform the claimed at least one row to simulate "a column environment" for the row as through the row was a column (i.e., what is the relationship of the claimed column environment and the "SQL" environment; how to associate the claimed generalized function with the column function performed on an indeterminate number of entries; what are these entries).

As to claims 6, 13, and 20, it is unclear: what was initialized to the claimed first entry, what was evaluated on each entry of the claimed at least one row, what was finalized after the evaluation of the last entry of the at least one row, or what is the purpose to perform the claimed initialization, evaluation, and finalization phases.

As to claims 2-7, 9-14 and 16-26, these claims have the same defects as their base claims, hence are rejected for the same reasons.

Because the ambiguous nature of instant invention, the following art rejection is to the best of the examiner ascertain.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Melton et al. (U.S. Patent No. 6,289,336).

As to claim 1, 8, 15 and 25, Melton et al. (hereinafter referred as Melton) discloses a database query system with means, method and computer program product as claimed by applicant, to perform query in a structure query language (SQL) environment [e.g., the unit (100, Fig. 1)] comprising the following functions:

a) an interface for allowing a user to specify row argument for a generalized scalar function [e.g., The user interface (106, Fig. 1) allows a user of the system to mark a SQL statement execution request (152, Fig. 2) as cited in the standard SQL statement “ SELECT ROWS SINCE (THIS (LOWTEMP) > LOWTEMP)...” (col. 12, lines 44-67).];

b) a SQL compiler simulates a column environment for the at least one row using the generalized scalar function to allow the at least one row to be provided to the column function as though the at least one row was a column [e.g., the SQL compiler unit (118, Fig. 1) and associated texts specifically at col. 3, line 65 – col. 4, line 11; the Improved Procedure for Computing Offset Function at col. 7, lines 60 - col. 8, line 44, Fig(s). 5-6 and associated texts; the normalization processing performed by the compiler upon the set of Running and Moving Sequence Functions at col. 11, line 6 –

col. 12, line 32; and the Normalization process for Rows since function at col. 13, lines 62 – col. 14, line 60; Table 7 and associated texts].

c) a Central Processing Unit (CPU) coupled to SQL executor to perform the column function on the at least one row to provide at least one output. [for example, CPU (102, Fig. 1) coupled to SQL executor (120, Fig. 1) which interprets on the set of complied definition blocks (150, Fig. 1) to build at least one execution tree (138, Fig. 1) for the CPU to execute the entries of the tree by converting the Rows Since (search condition) sequence function, evaluating each Offset sequence function using previously stored auxiliary fields/columns to provide a single scalar output (i.e., a distance in rows of the table between the current row and a first previous row that satisfies the search condition as specified by the Rows Since () at col. 16, lines 27-67].

As to claims 2-3, 6-7, 9-10, 13-14, 16-17, 20-24 and 26, Melton further discloses the generalized scalar function fetches at least one row [e.g., Melton: the Rows Since ()function, the Offset sequence functions; the running and moving sequence functions, col. 3, lines 4-23]; and use the scalar function to simulate the column function for repeating the initialization, evaluation and finalization phases to provide an output for a dynamic number of entries in the row [e.g., Melton: col. 7, lines 24 – col. 8, line 41, col. 8, lines 62 – col. 10, line 8, Table 5 and associated texts].

As to claims 4-5, 11-12 and 18-19, the combined system further discloses that the column function provides a maximum of each of the at least one row [e.g., Melton: the RunningMax(a); col. 10, lines 21-22] and a minimum of each of the at least one row [e.g., Melton: the RunningMin(a); col. 10, lines 19-20].

(10) Response to Argument

Appellant's piece-meal interpretation and arguments filed on July 11, 2007 have been fully considered but they are not persuasive.

The examiner disagreed with appellant arguments (cited in sections C-E) against specification objections, 35 U.S.C. 101 rejections and prior art 35 U.S. C. 102(e) rejections.

Under Section C of instant Appeal Brief that cited "the examiner has completely failed to explain why the specification is insufficient to ensure that the inventor had possession, as of the filing date of the application, the specific subject matter claimed."

In reply to the above arguments, the examiner indicates that the fact of instant specification had being repeatedly amended such as on 09/03/2003 and 10/06/2006 with lines of new explanations or new matters in order to support the claimed subject matters, itself tells that the specification as original filed on March 28, 2001 is insufficient to ensure the applicant had invent or possess claimed specific subject matters.

Furthermore, as cited in the final office action dated 04/17/2006 and recorded above, the examiner had specifically listed because "applicants have attempted to incorporate an abstract generalized scalar function and column function into their specification to thereby support claims to any combination or permutation of features therefrom. The fact that features are mentioned individually does not mean that applicants have invented anything. There must be some evidence within the application filed that applicants were in possession of the claimed combinations. Incorporation by

reference of a dictionary does not constitute disclosure of a novel which uses only words from that dictionary".

The examiner further cited that "The instant specification fails to disclose the actual, practical steps of a simulation mechanism and the corresponding data structures for simulating the claimed abstract generalized scalar function with row parameters into an abstract column environment. Particularly, the submitted specification merely recites allowing a user to specify at least one row for the claimed abstract generalized scalar function to simulate an abstract column environment for an abstract column function to be performed on the row without disclosing the actual, practical steps for forming the claimed abstract generalized scalar function, activating the claimed abstract generalized scalar function initializing the first entry, evaluating each entry and finalizing the last entry of the at least one row, such that the simulating of a column environment will produce a useful, concrete, and tangible result."

However until now, the appellant had not provide any evidence to overcome the issues cited above, as such, the examiner maintains the specification objection on record.

The examiner further disagrees with Appellant arguments (under Section D of instant Appeal Brief) against the 35 U.S. C. 101 rejections on record.

In reply to appellant arguments under Section D for reversing a matrix or table made by the attorney (Ms. Janyce R. Mitchell) on record, the examiner first points out that the arguments or explanations are not valid, because these statements is not made

by Ms. Janyce R. Mitchell, it is made by appellant only, who was not in the telephone interview dated on July 08, 2005.

Furthermore, Claims 1-26 recite an idea of utilizing a column function in a structure query language (SQL) environment for intended use in the preamble. However, the steps in the claim body allows the individual to specify at least one row as an argument for an abstract generalized scalar function to simulate an abstract column environment thereby. The "allowing" phrase repeatedly recited in independent claims 1, 8 and 15 does not cause any functionality to occur in the claimed system. This is demonstrated by the absent recitation of any code or hardware for causing the claimed system to do anything. Instead, it merely ensures that there is no code or steps that prohibit a computer system from doing the recited acts.

Additionally, during the telephone interview initiated by the instant application attorney -- Ms. Janyce R. Mitchell -- on July 8, 2005, the attorney on record indicated that the instant invention deals with reversing a matrix (or a table) to feed columns as rows into the claimed generalized scalar function to simulate a column environment on the at least one row to provide an output, but the output does not need to be repeatable for the same matrix (or table). Therefore, since the claimed invention, as a whole, does not appear to provide a useful, concrete and tangible result for advancing the art in a real world application, in fact, it will produce unavoidable, unstable and not useful results, which instead of advancing the technological art will degrade the art. As such, the instant invention is not deemed to provide a real world application.

In addition, the claimed computer-readable medium recited in claims 8-14 & 23 is intended to include a computer readable signal [e.g., please refer to the last paragraph of instant specification] which fails the claims fall within a statutory of invention.

Moreover, the recited system of claims 15-21 & 24 lacks of physical hardware to execute the claimed operations, it merely directs to abstract ideas or software per se.

Thus, based on the discussion above the examiner regards that the 35 U.S.C. 101 rejections should be maintained.

The examiner further disagrees with Appellant arguments (under Section E of instant Appeal Brief) against the 35 U.S. C. 112, second paragraph rejections on record.

In reply to appellant arguments that "the form of one embodiment of the generalized scalar function is essentially depicted as a flow char level in a portion of Fig. 4." Which is recorded as following:

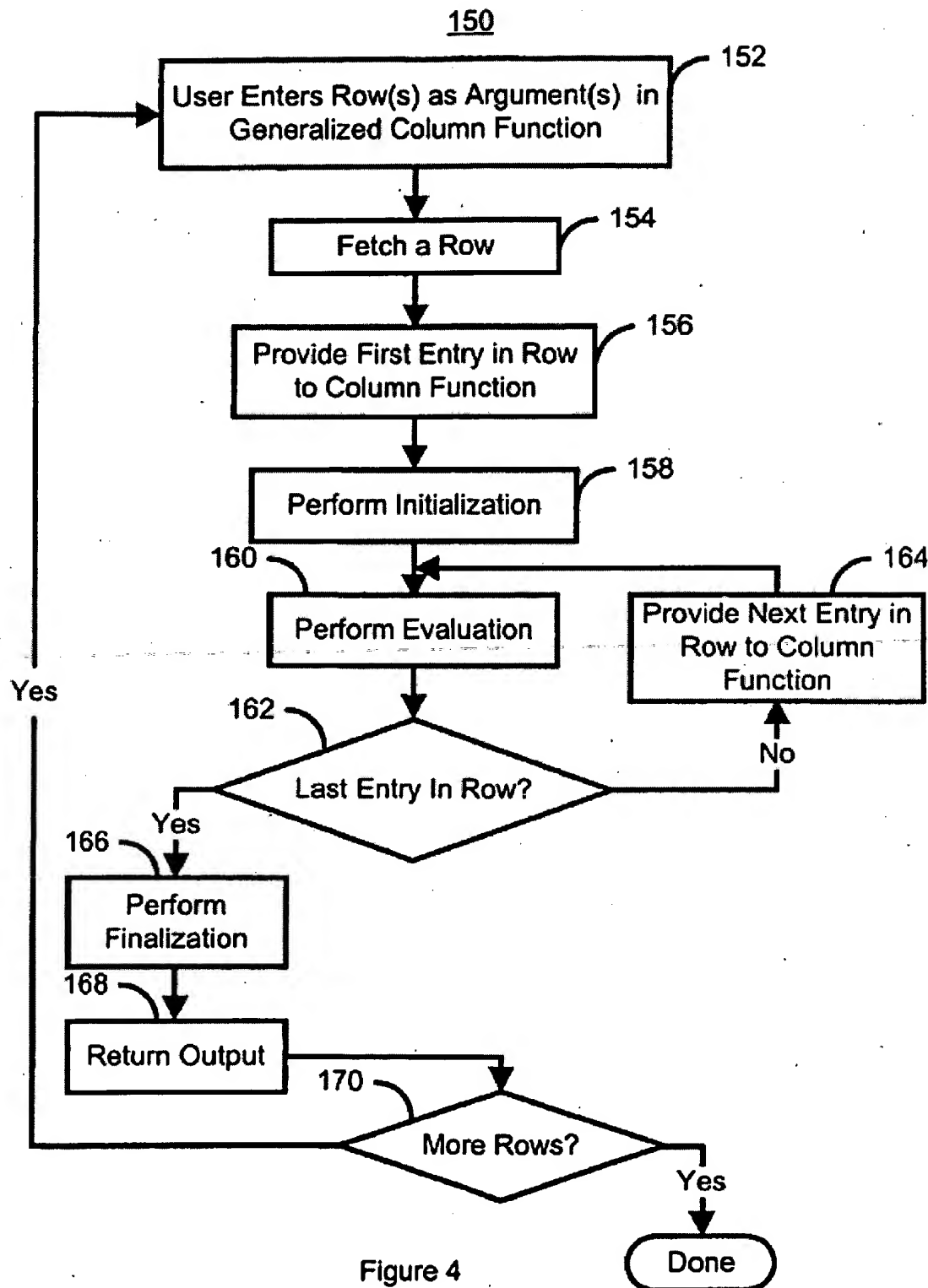


Figure 4

The instant further specifically disclosed that "FIG. 4 is a more detailed flow chart of one embodiment of a method 150 in accordance with the present invention for utilizing a column function with one or more rows of a table. The method 150 will be described in conjunction with the table 1 depicted in FIG. 1 for a relational database. The method 150 is preferably implemented in a SQL environment." (paragraph 0026 of instant invention)

Based on the recitation of this paragraph, and the logical flow depiction of Fig. 4, it merely describes a generalized column function to process entries in row one after another until no more rows being operated. Which in contrary to appellant arguments, provides no form to the claimed generalized scalar function.

Furthermore, at paragraph 0027 of instant specification which was excerpted as following: "The generalized scalar function is described above with respect to the method 100 depicted in FIG. 3." That is recorded as following:

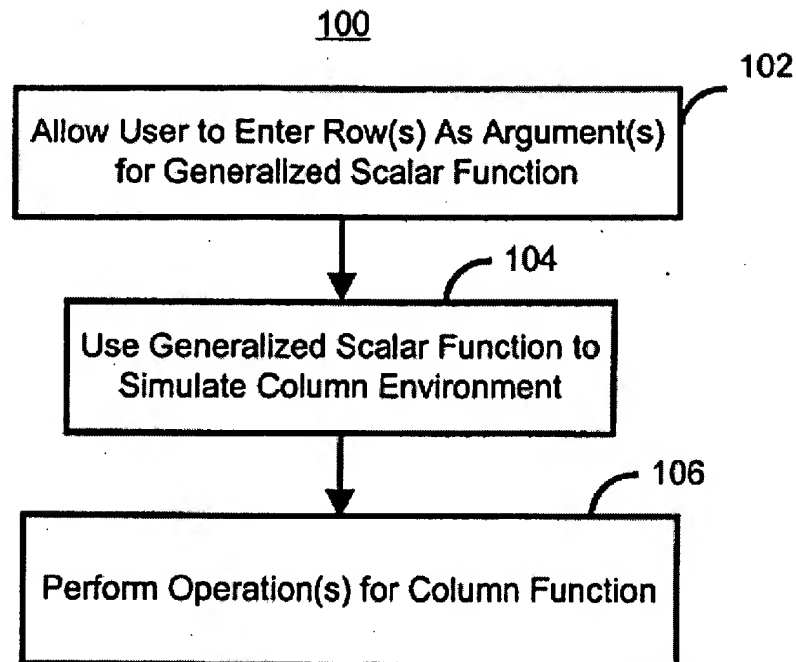


Figure 3

As set above, it seems that appellant try to allow user to enter row(s) for an abstract Generalized scalar function then used the generalized scalar function to simulate column environment and performs operations thereby. However, the descriptions merely cited simulate column environment which fails to disclose what is the actual structure of the claimed generalized scalar function. It also fails to show how could this generalized function transform/simulate the claimed at least one row with multiple fields to "a column environment" to make the fields of the row worked as columns (i.e., it still fail to show the relationship of the claimed column environment and

the "SQL" environment; how to associate the claimed generalized function with the column function performed on an indeterminate number of entries as shown in Fig. 4).

Thus, based on the discussion above, the ambiguous nature of instant disclosure renders the claims under 35 U.S.C. 112 rejections.

Moreover, the examiner disagrees with Appellant arguments (under Section F of instant Appeal Brief) against the 35 U.S. C. 102(e) rejections as cited on record.

Mainly, Appellant argued that "Melton fails to teach or suggest the use of the recited generalized scalar function in conjunction with a (pre-existing, conventional) column function."

In response to the above arguments, the examiner directs appellant attention to the following excerpts cited by Melton:

"The present invention provides a method for computing the Offset function, within the context of a data flow operator of a database system, that provides both correct behavior and efficient performance. It accomplishes this by ensuring that (1) each expression is evaluated only once, (2) a minimum of data is stored for previously computed rows, and (3) repositioning to other rows is minimized." (col. 6, lines 24-30)

Furthermore, Melton clearly disclosed a plurality of Running and moving sequence functions, for example the RunningMin(a), RunningMax(a), Running Average(a), RunningSum(a) , ...etc. as shown at col. 10, lines 15 – 42.

In addition, Melton clearly cited that "The present invention greatly reduces the computational resources required to compute the running and moving sequence

functions by providing a method for normalizing such functions during SQL compilation.

The normalization allows the functions to be computed in a small number of operations per function, independent of both the number of rows previously processed and the moving window size. The resulting expressions consist only of the primitive Offset function and other standard scalar expressions." (col. 10, lines 64 – col. 11, lines 5)

As set forth above, Melton clearly disclosed that his system provides Offset function within the context of a database system, wherein the offset function and other standard scalar expression are deemed to read on the claimed generalized scalar function, because they are the resulting scalar expressions of the running and moving sequence functions which take rows of database tables as arguments for their specific predefined functions and the scale functions were transformed into scalar expressions by the Structure Query Language (SQL) compiler, from the row based running and moving sequence Functions into column based offset scalar expressions [e.g. as shown in Table 6 at col. 11 – 12] for working on columns of aux tables [e.g., as shown in Fig. 6] during the system normalization process.

Thus, based on the discussion in contrary to applicant's arguments, Melton clearly anticipated the use of the recited generalized scalar function in conjunction with at least one column functions which performs the conventional/pre-exist column functions such as search for minimum, maximum, average, sum, etc. utilities.

As set forth above, because applicant does not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed

Application/Control Number:
09/820,451
Art Unit: 2161

Page 20

by the references cited or the objections made. Further, they do not show how the amendments avoid such references, objections and rejections, therefore, it is believed that the objections and rejections on record should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

Susan Y Chen
Examiner
Art Unit 2161



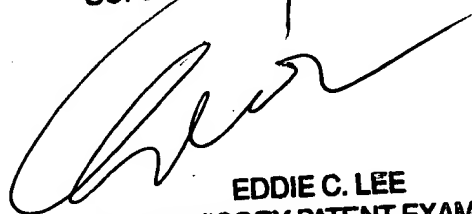
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